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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,923	12/31/2001	Kang-Bok Lee	51876P288	8511

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EXAMINER

JAGANNATHAN, MELANIE

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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05/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/038,923	LEE ET AL.
	Examiner	Art Unit
	Melanie Jagannathan	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 February 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 8-10, 13 and 14 is/are allowed.
- 6) Claim(s) 1, 3-7, 11 and 12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

- Examiner has considered Amendment after Non-Final mailed 2/27/2007.
- Claims 1, 3-14 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3 - 7 and 11 - 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,480,839 to Whittington et al in view of U.S. patent 6,711,562 to Ross et al as applied above to claim 1, and further in view of U.S. patent 5,848,416 to Tikkanen.

With regard to claim 1, Whittington et al teaches assigning keys to a node used in a multiway search key, as taught in col 8 generally, and also in figure 5a. Whittington et al further teaches assigning pointer information to the node wherein said information is accommodated in a cache. It is noted that the information is included in the cache "independent of the number of keys used." For the discussion of a cache, see the detailed description, par 40.

Whittington et al do not teach the use of a "cache line". This is taught in Ross et al, which teaches an invention similar to Whittington et al. See col 4 line 45. It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Whittington et al with a cache line, in light of the teachings of Ross et al, in order to provide the data to the system in an efficient manner.

With regard to claim 11, see the rejection above and note that it would be obvious to implement it in software in order to insure its repeatability.

Whittington et al/Ross et al teach the invention as discussed above, but do not teach the use of a "node pointer" wherein the applicant has defined the node pointer to include information regarding the node type. Tikkannen teaches the inclusion of a node type. See col 4 lines 55+. It would have been obvious to one of ordinary skill in the art at the time of the invention to have included information regarding node type in Whittington et al/Ross et al in light of the teachings of Tikkannen in order to provide a system that is capable of traversing the tree amongst child/parent nodes in a more effective manner.

With regard to claim 3, note the use of the pointers which delineate key values on a contiguous scale.

With regard to claim 4, see the discussion of the pointer in col 8 of Whittington et al and also detailed description par. 39 of Ross et al.

With regard to claim 5, see the rejection above, and note the value C in Whittington, col 8.

With regard to claim 6, see col 4 lines 60+ of Tikkannen.

With regard to claim 12, see the discussion of the node pointer and key pointers discussed above.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 5,848,416 to Tikkanen in view of U.S. patent 6,711,562 to Ross et al.

With regard to claim 1, Tikkanen teaches assigning search keys to nodes (see col 7 lines 10+) and pointer information (col 4 lines 60+) independent of the number of keys present, and use of a cache (det description par 27) but does not teach using a cache line. This is taught in Ross et al. See above. It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Tikkanen with a cache line in light of the teachings of Ross et al in order to provide the information to the system in an efficient manner.

With regard to claim 11, note the above and the fact that it would be obvious to operate the above device under the control of software in order to insure its repeatability.

Allowable Subject Matter

5. Claims 8-10, 13-14 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: prior art of record does not disclose, in single or in combination, if the inputted IP address is consistent with the key value, searching an outgoing interface by using a key pointer included in the node, if it is not consistent with the key value, determining a type

of node by searching a node pointer, if node is a leaf, searching the outgoing interface by acquiring the key pointer if the inputted IP address is consistent with the key value in combination with the other limitations of the claims.

Response to Arguments

6. Applicant's arguments filed 2/27/2007 have been fully considered but are moot in view of new grounds of rejection.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melanie Jagannathan *MJ*
Patent Examiner
Art Unit 2616


CHI PHAM
SUPERVISORY PATENT EXAMINER
8/14/07